

**EMIRATES INTERNATIONAL SCHOOL**

**JUMEIRAH**

**DESIGN**

**PROJECT-1**

**2014-2015**

**Creating solution**

**Inquiring and analysing**

**Developing ideas**

**Evaluating**

**Strands Assessed on**

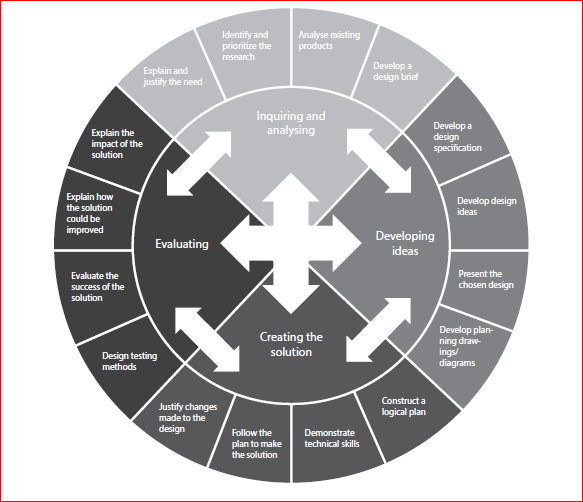
**MYP 4 (YEAR 10)**

**PROJECT-1: Electronic store control**

**Subject: DESIGN Grade: MYP LEVEL 4 (YEAR 10)**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Criterion A** | Inquiring and analysing | **Maximum 8** | **Marks awarded** |
| **Teacher comment** |  | | |
| **Criterion B** | Developing ideas | **Maximum 8** | **Marks awarded** |
| **Teacher comment** |  | | |
| **Criterion C** | Creating the solution | **Maximum 8** | **Marks awarded** |
| **Teacher comment** |  | | |
| **Criterion D** | Evaluating | **Maximum 8** | **Marks awarded** |
| **Teacher comment** |  | | |

**The MYP design cycle**

**MYP Unit Question:** How can a Business or an Organization modernize its records using Information Technology?

**Global Context for this unit**:

**Scientific and technical innovation**

**Approaches to Learning**:

* Organization
* Communication
* Information Literacy
* Thinking

**Context or Scenario:**

Mr. Abdulla works at EIS-J and is in charge of ordering stationery from suppliers. Stationery can include anything from papers, document wallets to sellotape and board pens.

He deals in the main with three suppliers :

NMC , Emitec & Lee & co.

At the end of each school year he phones around the key suppliers for best current prices and keeps details in a spreadsheet of each item, along with the best price and supplier.

The school has ten faculties : English, Maths, Science , Technology and so on. Each faculty has a budget holder who is responsible for completing stationary orders. Usually there will be a major order at the start of the year and then a number of minor ones throughout the school year.

At the start of the new school year the budget holder for each faculty is allocated a sum of money for stationery based on numbers of students. Mr. Abdulla issues a stationery price list and order form to all budget holders. This has to be completed before the start of the school year.

Mr. Abdulla currently keeps all his records on a spreadsheet but thinks a database solution may improve processing. He wants to :

* maintain a database of suppliers
* maintain a database of products and best prices
* keep track of faculty ordering and improve his record keeping
* produce reports analyzing faculty expenditure
* produce reports analyzing usage e.g. paper
* use the information to better plan needs
* provide better information to faculties and management on expenditure.

Write a Scenario to explain what you are being asked to do and how you are going to respond to their request.

 Read the Scenario you have written and decide which are the most important and relevant points contained in it. Some example questions to ask yourself could be:

1. Who is my customer?
2. What does he/she want?
3. What can I use to provide what he wants?
4. Where will he/she use the product?
5. Who (in the organisation) will use the product?
6. When will they use the product?
7. How am I going to provide a design solution?
8. What are the limits on this project? (time, computer systems, skills.)

Write a design brief based on this Scenario this should **FULLY EXPLAIN** what you are going to create.

You can now begin to **RESEARCH** your project, some topics for research could be: **(there may be more)**

* 1. What is a Database?
  2. How do I create a Database using computer software?
  3. How can it help my customer to keep records?
  4. What does my customer do with these records?
  5. Research existing means of keeping records.
  6. What would be a possible solution using the software and computer system the customer has in his organisation.
  7. What level of computing skills do the users of the database have?

**ACKNOWLEDGE** all research that is taken from sources such as the internet, books, people you interview.

**CRITICALLY**discuss your research. (Do you agree with other people’s views) make comments on each piece of research you include in the project.

**Notes for criterion A**

* When developing the design brief, students should concisely summarize only the useful and relevant information they have found through their research. They will present this information in their own words. Students should not copy and paste information from sources without analysis or indicating relevance.

**Notes for criterion B**

* In MYP design, a feasible idea is one that the student can create within the allocated time with the tools and facilities available to them.
* Examples of “planning drawings/diagrams” for digital design solutions include website navigation maps, interface layout—aesthetic considerations (websites), detailed sketches (graphic design), detailed storyboards (video editing and animations), and so on.
* Examples of “planning drawings/diagrams” for product design solutions include scale drawing with measurements (orthographic), part and assembly drawings, exploded drawings, recipes, cutting plans, and so on.

**Notes for criterion C**

* When changes have been made to the solution, students must describe and justify each change. If there are no changes to the plan, students are not required to describe or justify any changes.
* **Technical skills:** A student’s level of technical skill can be determined using the following two factors:

– the complexity of skill demonstrated

– the level of guidance needed from the teacher to complete the task.

The teacher should determine an age-appropriate level of technical skill demonstrated by the student using a “best-fit” approach. A clarification is detailed below.

**Minimal technical skills:** Simple skills are demonstrated and the student requires a great deal of assistance after they have received initial instruction on how to use tools.

**Satisfactory technical skills:** Simple and complex skills are demonstrated and the student requires some assistance after they have received initial instruction on how to use complex tools.

**Competent technical skills:** Complex skills are demonstrated and the student generally works independently, requiring some guidance after initial instruction.

**Excellent technical skills:** A wide range of complex skills are demonstrated and the student works independently, requiring minimal guidance after initial instruction.

**Notes for criterion D**

* **Product testing:** This is a stage in the design process where versions of products (for example, prototypes) are tested against the design need (specification), applied to the context and presented to the end-user or target audience. These tests may include the collection and analysis of data. Types of testing include **user trial and observation:** (usability and intuitiveness), **field/ performance test:** (functionality and performance), **expert appraisal:** (beta testing, consumer testing)
* **Authentic tests:** The tests are relevant to the project and are completed by appropriate testers to gain high-quality quantitative and qualitative feedback.

**Criterion A: Inquiring and analysing**

**Maximum: 8**

Students identify the need for a solution to a problem. At the end of year 5, students should be able to:

i. explain and justify the need for a solution to a problem for a specified client/target audience

ii. identify and prioritize primary and secondary research needed to develop a solution to the problem

iii. analyse a range of existing products that inspire a solution to the problem

iv. develop a detailed design brief, which summarizes the analysis of relevant research.

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| **Achievement level** | **Level descriptor** |
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1–2 | The student:  i. **states** the need for a solution to a problem for a specified client/target audience  ii. develops a basic design brief, which states the findings of relevant research. |
| 3–4 | The student:  i. **outlines** the need for a solution to a problem for a specified client/target audience  ii. **outlines** a research plan, which **identifies** primary and secondary research needed to **develop** a solution to the problem, **with some guidance**  iii. **analyses one** existing product that inspires a solution to the problem  iv. **develops** a design brief, which **outlines** the analysis of relevant research. |
| 5–6 | The student:  i. **explains** the need for a solution to a problem for a specified client/target audience  ii. **constructs** a research plan, which **identifies** and **prioritizes** primary and secondary research needed to **develop** a solution to the problem, **with some guidance**  iii. **analyses a range of** existing products that inspire a solution to the problem  iv. **develops** a design brief, which **explains** the analysis of relevant research. |
| 7–8 | The student:  i. **explains** and **justifies** the need for a solution to a problem for a client/ target audience  ii. **constructs** a **detailed** research plan, which **identifies** and **prioritizes** the primary and secondary research needed to **develop** a solution to the problem independently  iii. **analyses a range of** existing products that inspire a solution to the problem in detail  iv. **develops** a **detailed** design brief, which **summarizes** the analysis of relevant research. |

Criterion B: Developing ideas

**Maximum: 8**

Students develop a solution. At the end of year 4, students should be able to:

i. develop design specifications, which clearly states the success criteria for the design of a solution

ii. develop a range of feasible design ideas, which can be correctly interpreted by others

iii. present the chosen design and justify its selection

iv. develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the chosen solution.

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| **Achievement level** | **Level descriptor** |
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1–2 | The student:  i. **lists some basic** design specifications for the design of a solution  ii. **presents one** design, which can be interpreted by others  iii. **creates** incomplete planning drawings/diagrams. |
| 3–4 | The student:  i. **lists some** design specifications, which relate to the success criteria for the design of a solution  ii. **presents a few** feasible designs, using an appropriate medium(s) **or** annotation, which can be interpreted by others  iii. **justifies** the selection of the chosen design with reference to the design specification  iv. **creates** planning drawings/diagrams or **lists** requirements for the creation of the chosen solution. |
| 5–6 | The student:  i. **develops** design specifications, which **outline** the success criteria for the design of a solution  ii. **develops a range of** feasible design ideas, using an appropriate medium(s) **and** annotation, which can be interpreted by others  iii. **presents** the chosen design and **justifies** its selection with reference to the design specification  iv. **develops accurate** planning drawings/diagrams and **lists** requirements for the creation of the chosen solution. |
| 7–8 | The student:  i. **develops detailed** design specifications, which **explain** the success criteria for the design of a solution based on the analysis of the research  ii. **develops a range of** feasible design ideas, using an appropriate medium(s) **and detailed** annotation, which can be **correctly** interpreted by others  iii. **presents** the chosen design and **justifies fully and critically** its selection with **detailed** reference to the design specification  iv. **develops accurate and detailed** planning drawings/diagrams and **outlines** requirements for the creation of the chosen solution. |

Criterion C: Creating the solution

**Maximum: 8**

Students create a solution. At the end of year 5, students should be able to:

i. construct a logical plan, which describes the efficient use of time and resources, sufficient for peers to be able to follow to create the solution

ii. demonstrate excellent technical skills when making the solution

iii. follow the plan to create the solution, which functions as intended

iv. fully justify changes made to the chosen design and plan when making the solution a. present the solution as a whole

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| **Achievement level** | **Level descriptor** |
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1–2 | The student:  i. **demonstrates minimal** technical skills when making the solution  ii. **creates** the solution, which functions **poorly** and is presented **in an incomplete form**. |
| 3–4 | The student:  i. **constructs a plan** that contains some production details, resulting in peers having difficulty following the plan  ii. **demonstrates satisfactory** technical skills when making the solution  iii. **creates** the solution, which **partially** functions and is **adequately** presented  iv. **outlines** changes made to the chosen design and plan when making the solution. |
| 5–6 | The student:  i. **constructs a logical plan**, which considers time and resources, sufficient for peers to be able to follow to create the solution  ii. **demonstrates competent** technical skills when making the solution  iii. **creates** the solution, which functions **as intended** and is presented **appropriately**  iv. **describes** changes made to the chosen design and plan when making the solution. |
| 7–8 | The student:  i. **constructs a detailed and logical plan**, which **describes** the efficient use of time and resources, sufficient for peers to be able to follow to create the solution  ii. **demonstrates excellent** technical skills when making the solution.  iii. follows the plan to **create** the solution, which functions **as intended** and is presented **appropriately**  iv. fully **justifies** changes made to the chosen design and plan when making the solution. |

Criterion D: Evaluating

**Maximum: 8**

Students evaluate the solution. At the end of year 5, students should be able to:

i. design detailed and relevant testing methods, which generate data, to measure the success of the solution

ii. critically evaluate the success of the solution against the design specification

iii. explain how the solution could be improved

iv. explain the impact of the solution on the client/target audience.

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| **Achievement level** | **Level descriptor** |
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1–2 | The student:  i. **designs a** testing **method**, which is used to measure the success of the solution  ii. **states** the success of the solution. |
| 3–4 | The student:  i. **designs a relevant** testing **method**, which generates data, to measure the success of the solution  ii. **outlines** the success of the solution against the design specification based on **relevant** product testing  iii. **outlines** how the solution could be improved  iv. **outlines** the impact of the solution on the client/target audience. |
| 5–6 | The student:  i. **designs relevant** testing **methods**, which generate data, to measure the success of the solution  ii. **explains** the success of the solution against the design specification based on **relevant** product testing  iii. **describes** how the solution could be improved  iv. **explains** the impact of the solution on the client/target audience, **with guidance**. |
| 7–8 | The student:  i. **designs detailed and relevant** testing **methods**, which generate data, to measure the success of the solution  ii. critically **evaluates** the success of the solution against the design specification based on **authentic** product testing  iii. **explains** how the solution could be improved  iv. **explains** the impact of the product on the client/target audience. |

Design glossary

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| **Term** | **Definition** |
| **Appropriate quality** | This is the best product/solution that the student can produce, taking into account the resources available, the skills and techniques he or she has used, his or her educational development, how the product/solution addresses the identified need, and aspects of safety and ergonomics. |
| **Authentic tests** | The tests are relevant to the project and are completed by appropriate testers to gain high-quality quantitative and qualitative feedback. |
| **Client** | An individual, a company or organization that commissions a designer to develop a solution to a personal or particular design problem. |
| **Computer-aided design (CAD)** | The use of computers to design products/solutions. |
| **Computer-aided manufacture (CAM)** | The use of computers to cut materials or create components, normally using CAD  or numeric control. |
| **Design brief** | The student’s response to the design situation, based on his or her research, detailing how he or she intends to solve the problem. This will summarize the relevant findings from his or her research, and inform the development of his or her design specification. |
| **Design situation** | A short introduction to a project written by the teacher or client, which frames a design project in terms of the nature of the problem to be addressed or an area from which students will identify a challenge or problem that needs to be solved. The design situation is drawn from the statement of inquiry and presents the scope of a project. |
| **Design specification** | A detailed description of the conditions, requirements and restrictions with which a design must comply. This is a precise and accurate list of facts, such as conditions, dimensions, materials, process and methods, that are important for the designer and for the user. All appropriate solutions will need to comply with the design specification. |
| **Expert appraisal** | A type of product testing, which relies on the knowledge of an expert in the operation of a product. This can include interviewing an expert, beta testing and consumer testing. |
| **Field test** | A type of product testing, which tests the performance of a new product under the conditions it will be used, which normally focuses on aspects of functionality (durability, robustness, suitability to its environment, and so on). |
| **Performance test** | An evaluation of the actual performance of a product within the task or learning objective using the conditions under which it will be performed and the absolute standard for acceptable performance. |
| **Planning drawings/ diagrams** | Detailed drawings or diagrams, which include details of a product’s components and how they are combined/assembled. |
| **Target audience** | A group of similar users who require a solution to a common problem or a product that fills a common need or want. |
| **User trial** | A type of product test carried out by allowing the target market to interact with the product/solution. The observation of people using a product and collection of comments from people who have used a product. This normally focuses on usability and intuitive interaction. |